



Indonesian Rural Healthcare Volunteers' Knowledge and Practice on Breast Cancer Prevention

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Article Info

Article history:

Received: 26 Agustus 2022

Revised: 28 oktober 2022

Accepted: 1 oktober 2022

Keywords:

*Breast Cancer Prevention
Rural Healthcare Volunteers
Knowledge
Early detection*

ABSTRACT

Introduction: Breast cancer has been a new burden and health related issues around the world include Indonesia. The Indonesian Government introduced the cancer care day since the last decade. Healthcare volunteers (HCVs) have been incorporated in the national program under prima health care supervision. The role of HCVs is to assist health care professional and mediate the rural population to actively participate in the health program. This study aims to identify knowledge and practices on breast cancer prevention among rural HCVs. **Methods:** A cross-sectional study conducted with a total of 52 respondents from a sub-district in Sulawesi Tenggara, rural HCVs, aged 18 years and above, who were recruited voluntarily. Data collection using validated knowledge and practices on breast cancer prevention questionnaires. **Results:** The participation rate was 65% from total RHCVs, age mean score 35.9 (19-55), all respondents were women, Moslem (90%), was married (86%), and have children (84%), was 90% have an elementary and secondary level of education, and household (80%). Nearly half of the participants have inadequate knowledge on breast cancer prevention. **Conclusion:** The knowledge and practice among volunteers are remain lack. Study in advance to investigate determinants knowledge and practices on breast cancer program among rural health care volunteers in large sample size is needed

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INTRODUCTION

Worldwide, there are around 2.1 millions newly diagnosed breast cancer incidences in 2018, and it was 1 out of 4 cancer cases among women (Bray *et al.*, 2018). The cancer was the vast majority diagnosed in 154 out of 185 countries, and it leads cancer death in over 100 countries all over the world. Breast cancer becomes a new burden, and health-related issues in Indonesia. The number of incident breast cancer cases increased gradually over the decade, and it was listed as the highest rank in all cancer incidences (Ramadhanty, Yarsa and Probandari, 2019). Nationally the availability of breast cancer incidence data in Indonesia is still limited, it was predominantly provided by hospital-based data. According to the Dharmas Cancer Hospital report, nearly 70% of cancer patients diagnosed in advanced stadium, ranging from stadium III to IV (RI, 2016) and it was resulting in high mortality rates (Sayed *et al.*, 2019). Similarly, in other developing countries, nearly 95% of women had never been screened related to cancers (Ochomo *et al.*, 2017). Even the cancer is preventable and early identifiable, due to lack of knowledge and skills mostly women do not actively participate in these issues, and that affects lack of awareness amongst the population.

Breast self-examination (BSE) is frequently and widely used as a screening technique (Hussain *et al.*, 2022). The screening can be performed at home for early breast cancer detection. As a method for screening, BSE is a simple, low cost, quick, and non-invasive (Getu *et al.*, 2022) in which a woman looks at her breast for any abnormal finding like lumps, distortion, discharges or swellings with an attention to detect it early for early initiation of treatment and better chance of survival for breast cancer patients and women who are high-risk for breast cancer (Asmare, Birhanu & Wako, 2022).

Even though, the Indonesian government under the Ministry of Health issued regulation about cancer prevention program that includes breast and cervix cancers, and the government covers all examinations payment through national health insurance scheme (BPJS). However, many Indonesian women faced many barriers such as multiple socio-economics, religious, cultural, health care provider, and health system barriers to access optimal breast cancer care (Sayed *et al.*, 2019). In order to improve participation among women on cancer prevention and early detection, engaging community volunteers or community health workers may have benefits. The community health workers were well recognized, and had been a beneficiary in LMICs in conducting and delivering health preventive programs (Basu *et al.*, 2019). The World Health Organization reported that the health volunteers in village community, in Thailand, have an important role in disease surveillance, disease prevention and control activities, and health promotion in general (Kowitz *et al.*, 2015).

In Indonesia, the majority of those community health volunteers are women. In many Indonesian rural communities, healthcare community or health care volunteers are an important group in promoting and encouraging community especially among women households to participate in health care programs. However, there are no studies evaluating health care volunteers' knowledge and skills on breast cancer prevention and early detection particularly among rural health care volunteers (RHCVs) in Eastern Indonesia (Yuhanah, Nuridah and Yodang, 2019). This study aims to examine the RHCVs' knowledge and practice on breast cancer prevention.

RESEARCH METHOD

This study was conducted between May 2019 and August 2019 in Wolo, a rural sub-district in Kolaka district of Southeast Sulawesi Province, Indonesia, and was approved by Research and Community Engagement Board of Universitas Sembilanbelas November Kolaka, Indonesia. A cross-sectional study was performed using paper-based questionnaires. This study was approved and deemed exempt from personal informed consent requirements by the Research and Community Engagement Board and Education Quality Assurance of Universitas Sembilanbelas November Kolaka.

The targeted population in this study was the registered community health volunteers attached to Wolo primary health care. The Wolo sub-district consists 16 villages, in which each village has 5 healthcare volunteers as representative and that makes 80 participants in total. All community health care volunteers are invited to participate in this study. A total of 52 health care volunteers who agreed to participate in this study, and it counted for 65% participation rate. There are 12 out of 16 villages' volunteers who involves in this study that makes 75% representative sample of the study within the sub-district.

The paper-based questionnaires applied in order to explore RHCVs' knowledge on breast cancer prevention. The questionnaires consist three themes such as breast cancer understanding, breast cancer prevention, and screening and early detection of breast cancer, which provide in 10, 12, and 10 questions, respectively. The socio-demographic characteristic included age, gender, religion affiliation, and marital status, number of children, age of the younger child, occupational status, educational background, volunteering experience, and training experience. All socio-demographic characteristics were categorized in various manners that depend on the characteristic itself.

The socio-demographic features were displayed using frequency, mean, minimum-maximum, and percentage. The correct answers of Knowledge and Practice domains were counted in frequencies and percentages, while the distribution of these domain figured into potential distribution, mean, standard deviation, minimum and maximum. After obtaining informed consent, the study respondents were interviewed at the community (their homes). All procedures performed were following the ethical standards of the national research committee and with the 1964 Helsinki declaration.

RESULTS

The IBM SPSS (Statistical Package for Social Sciences) version 23 (SPSS Inc., Chicago, IL, USA) were used to analyse the data. Descriptive statistics describe the characteristics of the sample, which including frequency, percentage, mean, minimum and maximum, and standard deviation (SD). There are 52 rural health care volunteers (RHCVs) evolved in this study (see table 1), and the study found that the age of RHCVs is ranging from 19 to 55 years old, while the mean of age is about 35.90 years old. All the RHCVs who participated in this study are women. According to religion affiliation, the majority of RHCVs are Moslem it is about 90%. The RHCVs who have married as predominant are reaching about 86%, while the widow only 1.9%. The RHCVs, who have more than 2 children, is nearly 40%. While, the youngest child of the RHCVs is 1 year old and the oldest one is 22 years old.

Table 1. Socio-demographic Characteristic of RHCVs

Socio-demographic data	Frequency (n=52)	Percent (%)
Age	Mean 35.90 (19-55)	
The younger child	Mean 8.53 (1-22)	
Gender		
Women	52	100
Religion		
Moslem	47	90.38
Christianity	5	9.62
Marital status		
Married	45	86.53
Never married	6	11.53

Widow	1	1.92
Number of children		
> 2	21	40.4
1-2 children	22	42.3
No child	9	17.3
Occupational		
Household	42	80.78
Self-employment	1	1.92
Teacher volunteer	1	1.92
Missing	8	15.38
Educational background		
Elementary	4	7.69
Secondary	43	82.69
Tertiary	2	3.85
Missing	3	5.77
Volunteering experience in years		
	Mean 8.65 (1-26)	
1-9	31	59.62
10-19	12	23.08
≥20	6	11.54
Missing	3	5.77
Training experiences		
Yes	34	65.38
No	18	34.62

In terms of occupational status, the RHCVs are predominantly as household who served domestic works for nurture their family. Interestingly, there is one of the RHCVs also being a teacher volunteer. Educational backgrounds, majority of the RHCVs hold secondary education level, and only 2 of the RHCVs who have tertiary or higher education level. Out of the RHCVs were have volunteering experiences are 10 years and above, is about 35%. While 6 the RHCVs already had being volunteer for more than 20 years.

According to examination among the RHCVs, which the exam focuses on the RHCVs' knowledge on breast cancer, breast cancer prevention, and early detection of breast cancer. This exam used researcher made questionnaires, in breast cancer, breast cancer prevention, and early detection of breast cancer themes provided 10, 12, and 10 questions, respectively. Most of the RHCVs have medium level in understanding of breast cancer that counted for around 63.5%. In this theme there is no the RHCVs who correct answer all questions. Further, in breast cancer prevention theme nearly 70% of the RHCVs who have high level of the knowledge. Following this, in early detection of breast cancer theme more than 50% the RHCVs have high level of score (see table 2).

Table 2. Breast Cancer Knowledge and practice of RHCVs

Breast Cancer Knowledge	Frequency (n=52)	Percent (%)
Understanding of Breast cancer (10 questions)		
Adequate (8-10)	12	23.08
Moderate (5-7)	33	63.46

Poor (1-4)	7	13.46
Breast cancer prevention (12 questions)		
Adequate (9-12)	36	69.23
Moderate (5-8)	14	26.92
Poor (1-4)	2	3.85
Practice early detection of breast cancer (10 questions)		
Adequate (8-10)	19	55.77
Moderate (5-7)	3	36.54
Poor (1-4)		5.77

Study finding reports that the RHCVs' knowledge on three forms questions varies among the respondents. In the form one, shows that the range of correct answer are ranging from 2 to 9. There is no RHCVs have full correct answers in the form one, while both in the form 2 and 3 there are some respondents have full correct answers (see table.3).

Table. 3 Distribution of RHCVs' knowledge and practice level form scores related to Breast Cancer Prevention

Score	Potential distribution	M ± SD	Min	Max
(F1) Understanding of breast cancer	0-10	6 ±	2	9
(F2) Breast cancer prevention	0-12	9.69 ±	4	12
(F3) Practice early detection of breast cancer	0-10	7.64 ±	2	10
Total score	0-32	23.33 ±	8	31

The breast cancer knowledge for communities particularly the RHCVs should reflect three major topics, breast cancer understanding, breast cancer prevention, and early detection of breast cancer (Tayerih *et al.*, 2019).

DISCUSSIONS

As per the findings, 23% have adequate knowledge on understanding breast cancer, while 69% and nearly 56% those have adequate knowledge on breast cancer prevention, and early detection of breast cancer, respectively. These results of study may affect by the level of educational among the participants, since those predominantly have secondary level of education. Accordingly, from training experience found that around 65% of those RCHVs had attended training, however there is no training related to breast cancer prevention.

The idea of exploration of Indonesian rural health cadre's knowledge on breast cancer prevention is not new. To our knowledge, however, this study is the first to investigate and explore Indonesian RHCVs' knowledge on understanding on breast cancer, breast cancer prevention, and early detection of breast cancer, and socio-demographic characteristics of RHCVs particularly from Eastern part of Indonesia.

This study finding was similar to study result which conducted by Dyanti & Suariyani 2016, the scholars identified some factors such as educational background, knowledge have shown significantly related to delay for initial assessment among women with breast cancer in Denpasar, Bali, Indonesia. Further, those participants who have secondary level in education or lesser seem

more likely to delay for initial assessment than participants who have tertiary level in education, that chance to delay was counted nearly 6 times higher than others (Dyanti and Suariyani, 2016). It was in line with study in Turkey, the scholars reported that educational level is a major determinant on breast cancer awareness among hospital staff who work in a women health hospital (Terzioğlu *et al.*, 2017). Further, the higher level of education among those women have significant awareness, based on statistics analysis. Similar finding, a study from Turkey found that the knowledge level among women Turkish on breast cancer were remain inadequate, however, the study point out that the practice of BSE was more frequent with women who were university graduates and who regarded their economic status as “good” (Sevinç, Oral and Korkut, 2020).

Improving communities’ knowledge on breast cancer prevention is crucial in order to increase the awareness and downstaging the breast cancer prevalence. According to Tanzanian scholars’ experience, educating among lay people being a trained governmental cadre shows that the significant improve in breast cancer survival particularly for those who live in rural areas (Ngoma, Mandeli and Holland, 2015). Because of poor knowledge on breast cancer prevention, the RHCVs need training in order to eligible and have knowledgeable to promote breast cancer prevention programs and engage women in rural areas to actively involves in regular assessment of breasts (Ghanbari *et al.*, 2020).

Even breast cancer screening was debating issue in almost LMICs, however promoting and incorporating the breast cancer prevention program has been introduced and implemented to population. (Gyawali *et al.*, 2016). Incorporating the RHCVs in that program will brings positive impact to raise community and population awareness’ on breast cancer prevention. Investigating, the RHCVs knowledge on breast cancer prevention and early detection will brings new insight for the local government especially in Kolaka district to offers regular training for RHCVs in order to improve the RHCVs’ knowledge and skills related to breast cancer prevention issues.

This study has limitation such as sample size was too small, because respondents who involved in this study recruited only from one sub-district. Further, barriers related to RHCVs’ knowledge such as internet access to online resources, information technology devices use, cultural barriers were unidentified. This affect study finding incomprehensively discussed the issue. However, we assume there are some predictors affect the RHCVs’ knowledge include educational background, working experience, and occupational. Study in advance to investigate determinants knowledge and practices on breast cancer program among rural health care volunteers in large sample size is needed.

CONCLUSION

Since breast cancer incidence is increased gradually during the decade. Promoting and involving community especially health care volunteer including those who living in rural areas in breast cancer prevention is necessary. In order to promote cancer prevention especially in breast cancer, understanding knowledge among RHCVs is necessary since them involve in health promotion program in their village under primary health care supervision. Nearly a half of RHCVs have inadequate knowledge on breast cancer prevention, this study finding informs us that training for the RHCVs is needed.

ACKNOWLEDGEMENTS

We are thankful for all participants who voluntarily involved in this study.

REFERENCES

- Asmare, K., Birhanu, Y., & Wako, Z. (2022). Knowledge, attitude, practice towards breast self-examination and associated factors among women in Gondar town, Northwest Ethiopia, 2021: a community-based study. *BMC Women's Health*, 22(1), 1-14.
- Basu, P. *et al.* (2019). A pilot Study to Evaluate Home-based Screening for the Common non-communicable Diseases by a Dedicated Cadre of Community Health Workers in a Rural Setting in India. *BMC Public Health*. *BMC Public Health*, 19(1), pp. 1–13. doi: 10.1186/s12889-018-6350-4.
- Bray, F. *et al.* (2018). Global Cancer Statistics 2018: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA A Cancer Journal for Clinicians*, 68(6), pp. 394–424. doi: 10.3322/caac.21492.
- Dyanti, G. A. R. and Suariyani, N. L. P. (2016). Faktor-Faktor Keterlambatan Penderita Kanker Payudara Dalam Melakukan Pemeriksaan Awal Ke Pelayanan Kesehatan. *Jurnal Kesehatan Masyarakat*, 11(2), p. 276. doi: 10.15294/kemas.v11i2.3742.
- Getu, M. A., Abebe, M., Tlaye, K. G., & Goshu, A. T. (2022). Breast Self-Examination Knowledge and its Determinants among Female Students at Addis Ababa University, Ethiopia: An Institution-Based Cross-Sectional Study. *BioMed Research International*, 2022.
- Ghanbari, A. *et al.* (2020). Social Determinants of Breast Cancer Screening Among Married Women: A Cross-Sectional Study. *Journal of Research in Health Sciences*, 20(1), pp. 1–5. doi: 10.34172/jrhs.2020.02.
- Gyawali, B. *et al.* (2016). Should Low-income Countries Invest in Breast Cancer Screening?. *Cancer Causes and Control*. Springer International Publishing, 27(11), pp. 1341–1345. doi: 10.1007/s10552-016-0812-8.
- Hussain, I., Majeed, A., Masood, I., Ashraf, W., Imran, I., Saeed, H., ... & Rasool, M. F. (2022). A national survey to assess breast cancer awareness among the female university students of Pakistan. *Plos one*, 17(1), e0262030.
- Kowitt, S. D. *et al.* (2015). Community Health Workers as Agents of Health Promotion: Analyzing Thailand's Village Health Volunteer Program. *Journal of Community Health*. Springer US, 40(4), pp. 780–788. doi: 10.1007/s10900-015-9999-y.
- Ngoma, T., Mandeli, J. and Holland, J. F. (2015). Downstaging Cancer in Rural Africa. *International Journal of Cancer*, 136(12), pp. 2875–2879. doi: 10.1002/ijc.29348.
- Ochomo, E. O. *et al.* (2017). Assessment of Community Health Volunteers' Knowledge on Cervical Cancer in Kadibo Division, Kisumu County: A cross Sectional Survey. *BMC Health Services Research*. *BMC Health Services Research*, 17(1), pp. 1–14. doi: 10.1186/s12913-017-2593-5.
- Ramadhanty, Z., Yarsa, K. Y. and Probandari, A. (2019). Construct Validity and Reliability of Indonesian Version of RAND SF-36 Quality of Life Questionnaire in Breast Cancer Patients. *Indonesian Journal of Cancer*, 13(2), p. 55. doi: 10.33371/ijoc.v13i2.621.
- RI, K. K. (2016). *InfoDatin Bulan Peduli Kanker Payudara*. Jakarta Selatan.
- Sayed, S. *et al.* (2019). Breast Cancer Knowledge, Perceptions and Practices in a Rural Community in Coastal Kenya. *BMC Public Health*. *BMC Public Health*, 19(1), pp. 1–14. doi: 10.1186/s12889-019-6464-3.
- Sevinç, N., Oral, B. and Korkut, B. (2020). Assessment of Knowledge, Attitudes, and Behaviors of Turkish Women on Breast and Cervical Cancer in Karabük Province, Turkey. *Kesmas*, 15(4), pp. 211–218. doi: 10.21109/KESMAS.V15I4.3865.
- Tayerih, K. *et al.* (2019). Woman's Sexual Health Knowledge and Needs Assessment in Behavioral Clinics and Shelters in Tehran. *Journal of Family & Reproductive Health*, 13(1). doi: 10.18502/jfrh.v13i1.1610.
- Terzioğlu, G. *et al.* (2017). Evaluation of Breast Cancer Knowledge and Awareness Among Hospital Staff in a Women Health Hospital in Turkey. *Journal of Cancer Education*, 32(1), pp. 59–64. doi: 10.1007/s13187-015-0981-2.
- Yuhanah, Y., Nuridah, N., & Yodang, Y. (2019). Pemberdayaan Kader Kesehatan Dalam Skrining dan Deteksi Dini Kanker Payudara Melalui Breast Self Examination, *Jurnal Penelitian Dan Pengabdian Kepada Masyarakat UNSIQ*, 6(3), 143–149. <https://ojs.unsiq.ac.id/index.php/ppkm/article/view/746>